

Claims:

1. A digital printing press capable of extracting extensible style language (XSL) formatting objects from a personal printing mark up language (PPML) work flow.
- 5 2. A method of printing a print run data comprising:
laying out a document page comprising at least one empty copy hole;
generating a second document, said second document having a data content,
wherein said second document is dimensioned so as to enable content re-flow within the
copy hole of the document page; and
10 merging said second document with said at least one document page to produce
said print run, in which said second document appears within said at least one copy hole of
said document page.
- 15 3. A method of printing a print run data comprising a plurality of individual print
items, said method comprising:
laying out at least one document page for said plurality of print items, said
document page comprising at least one empty copy hole;
generating at least one second document, said second document having a data
content, wherein said at least one second document is dimensioned so as to enable content
20 re-flow within said at least one copy hole; and
merging said at least one second document with said at least one document page to
produce said print run, in which said at least one second document appears within said at
least one copy hole of said at least one document page.
- 25 4. The method as claimed in claim 3, comprising :
laying out a plurality of document pages for a plurality of said print items, said
plurality of document pages comprising a plurality of empty copy holes;
generating a plurality of second documents, each said second document having a
corresponding data content, wherein said plurality of second documents are each
30 dimensioned so as to perform content re-flow within a corresponding said copy hole of a
corresponding said document page; and

merging said plurality of second documents with said plurality of document pages to produce said print run, in which said plurality of corresponding data contents appear within said copy holes of said plurality of document pages.

5 5. The method as claimed in claim 4, wherein said data content is variable as between different said second documents.

6. A method of producing a print run of print items on a digital printing press, said method comprising:

10 receiving a print data describing said print run, in the form of a first document in a page based format, and a second document in a document based format;
 extracting said second document in said document based format;
 rendering said second document to produce a rendered second document; and
 merging said rendered second document with said first document in said page
15 based format to produce a plurality of print items, wherein said rendered second document appears in at least one copy hole of successive said print items of said print run.

7. A print run data comprising:

 a first document data, said first document data having at least one unassigned copy
20 hole, said first document data being written in a page description language; and
 a second document data, said second document data being sized so as to fit into said unassigned copy hole, said second document data being written in a document description language.

25 8. A method of document formatting for digital publishing, said method comprising: designing a plurality of copy holes distributed across at least one PPML page;
 abstracting said plurality of copy holes out of said PPML page environment into a second page environment as a sequence, in which each said copy hole is assigned to a corresponding page in said second page environment, and said plurality of copy holes are
30 arranged as sequential pages in said second page environment.

9. The method as claimed in claim 8, wherein said second page environment comprises an extensible style sheet language for formatting objects (XSL-FO) environment.
- 5 10. A method of compiling a document for printing by digital printing press, said method including the step of referencing an extensible style sheet language for formatting objects (XSL-FO) document inside a personal printing mark-up language (PPML) *MARK* element.
- 10 11. A method of operating a digital printing press for printing a print run comprising a plurality of print items, said method comprising:
- receiving a PPML document having at least one XSL-FO document referenced therein inside a PPML *MARK* element;
- parsing said *MARK* element;
- 15 generating a rendered document which contains line by line positioning of rendered content; and
- merging said rendered content into said PPML document.
12. The method as claimed in claim 11, wherein said XSL-FO rendering engine is
- 20 connected to a PPML consumer.
13. The method as claimed in claim 11, wherein said rendered content comprises an SVG document.
- 25 14. The method as claimed in claim 11, wherein a rendered SVG document contains said line by line positioning.
15. A digital printing system adapted to
- receive a print data describing a print run in the form of a first document in a page
- 30 based format and a second document in a document based format;
- an extractor for extracting said second document in said document based format;

a rendering engine for rendering said second document to produce a rendered second document; and

5 a merging component for merging said rendered second document with said first document in said page based format to produce a plurality of print items, wherein said rendered second document appears as a variable content in at least one copy hole of successive said print items of said print run.

16. A digital printing system comprising:

10 a graphics tool capable of generating a plurality of PPML pages, each having at least one copy hole capable of being assigned variable data;

a manager component capable of abstracting said plurality of copy holes out of said plurality of PPML pages, into a second page environment, said plurality of copy holes being abstracted as a sequence in which each said copy hole is assigned to a corresponding page in said second page environment, and said plurality of copy holes being re arranged
15 as sequential pages in said second page environment.

17. The digital printing system as claimed in claim 16, further comprising a digital printing press capable of receiving a variable content, rendering said variable content and merging said rendered variable content into said plurality of copy holes.

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18. A graphics tool capable of generating a plurality of PPML pages, each having at least one copy hole capable of being assigned variable data.

19. A manager component capable of:

25 abstracting a plurality of copy holes out of a plurality of PPML pages, into a second page environment, said plurality of copy holes being abstracted as a sequence in which each said copy hole is assigned to a corresponding page in said second page environment; and

30 re arranging said plurality of copy holes as sequential pages in said second page environment.

20. A document comprising:
an extensible style sheet language for formatting objects (XSL-FO) document; and
a personal printing markup language (PPML) document;
wherein said XSL-FO document is referenced inside a PPML *MARK* element.

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21. A method of generating an output document which includes dynamic content comprising the steps of:

designating a plurality of fixed domains within a first source document for the accommodation of dynamic content;

10 rendering the dynamic content to produce second source document having a sequence of pages in which the dynamic content flows between pages; and

inserting the rendered dynamic content in the fixed domains to produce the output document so that the dynamic content in the second source document flows between fixed domains.

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22. A method according to claim 22 wherein the fixed domains are identified in a sequence.

23. A method according to claim 22 wherein at least one fixed domain in the sequence
20 identifies its predecessor in the sequence.

24. A method according to claim 23 wherein the rendered content fills up the domains in the order of the sequence.

25 25. A method according to claim 24 further comprising the step of generating a bitmap from the output document, and operating a print engine to print the bitmap on a printing medium.

26. A method of generating an output document including the steps of inserting
30 rendered dynamic content which flows between pages in a source document into a

sequence of domains in a further source document so that the rendered dynamic content flows between the domains.

27. A method according to claim 26 wherein the source document has a document
5 description format and the further source document has a page description format.

28. A method according to claim 26 wherein the domains in the further source document are of predesignated dimensions.

10 29. A method according to claim 28 wherein each domain in the sequence identifies its predecessor in the sequence, where one exists.

30. A method according to claim 26 further comprising the steps of generating a
15 bitmap from the output document and operating a print engine to print the bitmap on a printing medium.